

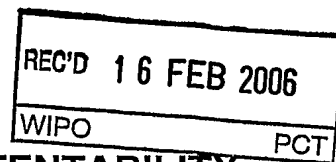
PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)



Applicant's or agent's file reference 3415-01-WO	FOR FURTHER ACTION		See Form PCT/PEA/416
International application No. PCT/US2005/008338	International filing date (day/month/year) 14.03.2005	Priority date (day/month/year) 17.03.2004	
International Patent Classification (IPC) or national classification and IPC C09D5/00, C09D5/02, C09D191/00			
Applicant THE LUBRIZOL CORPORATION et al.			
1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36. 2. This REPORT consists of a total of 8 sheets, including this cover sheet. 3. This report is also accompanied by ANNEXES, comprising: a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau a total of 5 sheets, as follows: <input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).			
4. This report contains indications relating to the following items: <input checked="" type="checkbox"/> Box No. I Basis of the opinion <input type="checkbox"/> Box No. II Priority <input checked="" type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input checked="" type="checkbox"/> Box No. VII Certain defects in the international application <input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application			
Date of submission of the demand 14.12.2005	Date of completion of this report 15.02.2006		
Name and mailing address of the international preliminary examining authority: <div style="display: flex; align-items: center;"> <div> European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465 </div> </div>	Authorized Officer Glomm, B Telephone No. +49 89 2399-7158		



**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
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Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1-25 as originally filed

Claims, Numbers

1-10 received on 27.12.2005 with letter of 14.12.2005

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

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Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:
- ☐ the entire international application,
 - ☐ claims Nos.
because:
 - ☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (specify):
 - ☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):
 - ☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.
 - ☐ no international search report has been established for the said claims Nos.
 - ☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:
 - the written form ☐ has not been furnished
 - ☐ does not comply with the standard
 - the computer readable form ☐ has not been furnished
 - ☐ does not comply with the standard
 - ☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-*bis* of the Administrative Instructions.
 - ☒ See separate sheet for further details

**INTERNATIONAL PRELIMINARY REPORT
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International application No.
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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	
	No: Claims	1-10
Inventive step (IS)	Yes: Claims	
	No: Claims	1-10
Industrial applicability (IA)	Yes: Claims	1-10
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Cited documents:

- D1: WO 03/072270 A (BAF INDUSTRIES) 4 September 2003 (2003-09-04)
- D2: WO 02/052066 A (DENOVOUS LLC) 4 July 2002 (2002-07-04)
- D3: WO 02/10278 A (ANSELL HEALTHCARE PRODUCTS INC; NILE, JEFFERY, G; GROMELSKI, STANLEY,) 7 February 2002 (2002-02-07)
- D4: US-B1-6 312 509 (MORADIAN EBRAHIM) 6 November 2001 (2001-11-06)
- D5: US 2004/024135 A1 (VERGE CHRISTOPHE ET AL) 5 February 2004 (2004-02-05)
- D6: GB-A-2 358 597 (MOBIL OIL COMPANY LIMITED) 1 August 2001 (2001-08-01)
- D7: WO 00/58410 A (BARTHLOTT, WILHELM; NEINHUIS, CHRISTOPH) 5 October 2000 (2000-10-05)
- D8: US-A-6 033 736 (PERLMAN ET AL) 7 March 2000 (2000-03-07)
- D9: US-A-5 977 227 (MCCREIGHT ET AL) 2 November 1999 (1999-11-02)
- D10: US-B1-6 348 528 (SCHLARB BERNHARD ET AL) 19 February 2002 (2002-02-19)

1. Novelty (Art. 33 (2) PCT)

Each of cited documents D1 to D10 discloses a method for coating a surface of a substrate comprising the steps of (a) applying an aqueous discontinuous emulsified material to a surface of a substrate and (b) drying or allowing to dry the said emulsified material as a surface coating on the substrate as specified in present independent main claim 1 (for relevant passages, see the corresponding International Search Report).

The attention of the applicant is drawn especially to the fact, that the term "discontinuous emulsified material" as specified in present independent main claim 1 in line 2, on the one hand, the terms "major amount" and "minor amount" of lines 3/4, and the term "drying or allowing to dry ..." in the third line, on the other hand, respectively, appear to be implicitly disclosed by each of said documents D1 to D10 in view of the principles of the established official rules of practice. Implicit (or inherent) disclosure corresponds to the fact, that the claimed product is regarded as being anticipated actually by said prior art documents, even if the claimed terms as specified in the said lines of present main claim 1 are not expressly mentioned therein, i.e., the terms are regarded as being actually present in the prior art embodiments, but simply not determined and/or mentioned expressly therein.

Consequently, each of said documents D1 to D10 anticipates the subject matter of present claim 1. The considerations of the applicant as pointed out in the letter dated 14.12.2005 failed to present a clear delimitation of the claimed subject matter over the prior art disclosure as regards any unambiguously identifiable technical features.

The same considerations also relate to the additional features of the following claims 2 to 10 when taking into account the full disclosure of each of said documents D1 to D10.

Therefore the subject matter of present application is not new in view of the disclosure of each of said documents D1 to D10.

2. Inventive Step (Art. 33 (3) PCT)

Providing an amended main claim which meets the requirements of Art. 33 (2) PCT, the applicant should relate the distinguishing feature to a surprising (unexpected) technical effect or make credible or plausible that the distinguishing feature is not derivable from the prior art teaching (Art. 33 (3) PCT).

3. Miscellaneous

The term "discontinuous emulsified material" as specified in present independent main claim 1 in line 2, on the one hand, the terms "major amount" and "minor amount" of lines 3/4, and the term "drying or allowing to dry ..." in the third line, on the other hand, respectively, appear to attempt a definition of the subject matter to be protected by means of the corresponding results to be achieved, rather than by means of clear and unambiguous technical features, such violating the Art. 6 PCT. Furthermore, the said objected terms do not represent clear and unambiguous technical features, but relative terms having no clear and unambiguous meaning among the average persons skilled in the art. The applicant therefore is invited to replace said objected terms by clear and unambiguous technical features based on suitable subclaims or relevant passages taken from the present description.

In order to improve the understanding and legibility of the application, in the European regional phase, if any, the applicant is invited to identify the documents D1 to D10 in the description additionally and briefly discuss the relevant background art disclosed therein.

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(SEPARATE SHEET)**

International application No.

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When filing amendments, any undue extension of the scope of the application should be avoided.

1. A method for coating a surface of a substrate comprising the steps of:
 - (a) applying an aqueous discontinuous emulsified material to a surface of a substrate wherein the emulsified material comprises (a) a major amount of an aqueous phase, (b) a minor amount of a non-aqueous phase and (c) a minor but effective amount of at least one emulsifier to emulsify the aqueous and non-aqueous phase resulting in an emulsified material and wherein the emulsified material has an aqueous phase content in the range of about 5% to about 99% by weight of the emulsified material and wherein the emulsified material has a viscosity in the range of about 200 cSt to about 5,000,000 cSt; and
 - (b) drying or allowing to dry the emulsified material as a surface coating on the substrateresulting in a surface coating applied as a thin film coating to a substrate which acts as a barrier, a strengthener for the surface, corrosion protection, evaporation protection, oxidation protection, water protection, adhesion protection, dissociation protection, degradation protection, wear protection or mixtures thereof.
2. The method of claim 1 comprising the further step of (c) removing the surface coating from the substrate.
3. The method of claim 3 wherein the emulsified material comprises at least one component selected from the group consisting of water soluble additive(s), alcohol(s), organic soluble additive(s), propellant(s), thickener(s), corrosion inhibitor(s), grease, or mixtures thereof and wherein the emulsified material further comprises thickeners, non-aqueous thickeners, viscosity modifiers, water soluble additives, extreme pressure additives, antiwear additives, metal deactivators, dispersants, antifoams, water soluble organic compounds, biocides, alcohols, corrosion inhibitors, rust inhibitors, antioxidants, detergents, polymers, functionalized polymers, organic soluble additives, alcohols, propellants, an anticorrosion modifier in the non aqueous phase or mixtures thereof.
4. The method of claim 1 wherein the emulsified material has an aqueous phase content in the range of about 60% to about 85% by weight of the emulsified material and wherein the dried surface coating has a thickness in the range of about 0.01 micron to about 50 microns.

5. The method of claim 3 wherein the emulsified material has a non-aqueous phase selected from the group consisting of organic materials, oils, greases, thickened oils, thickened grease, gels, thickened solvents, monomers, polymeric materials, solvents, waxes and mixtures thereof and in the range of about 1% to about 95% by weight of the emulsified material.
6. The method of claim 1 wherein the surface coating is selected from the group consisting of a translucent coating, opaque coating, transparent coating, permanent coating, semi permanent coating, temporary coating, removable coating and combinations thereof and wherein the substrate for the surface coating to be coated is selected from the group consisting of metal, wood, concrete, stone, asphalt, glass, plastic, composites, fabric, rubber, carbon steel, stainless steel, aluminum and mixtures thereof.
7. The method of claim 1 wherein the surface coating is applied by a method selected from the group consisting of spraying, dipping, spinning, vacuum depositing, reverse rolling, wire-wounding, direct and offset gravure, slot dieing, blading, hot melting, curtaining, knife over rolling, extruding, air knifing, rotary screening, multilayer sliding, painting, brushing, co extrusioning, meniscusing, micro gravure coating, atomizers and combinations thereof and wherein the coating is dried by a method selected from the group consisting of evaporation, dissipation, curing, heating and combinations thereof.
8. The method of claim 1 wherein the surface coating is applied by a method selected from the group consisting of an aerosol container and an application of airless atomization; fluid delivering air space system that is pressurized or suction fed; a pressure-feed system with air-assisted airless internal mixing atomization; a compressed air operating at about 35 to about 1050 kPa with the range of about 5 to about 150 psi adjacent to the airless nozzle and impinges upon the thin sheet of fluid as it exits from the spray nozzle orifice in the range of about .0005" to about 0.020" tips; and combinations thereof.
9. The method of claim 4 wherein the propellant(s) is selected from the group consisting of maybe liquefied, compressed gas and mixtures thereof.
10. The method of claim 1 wherein the emulsified material comprises a water emulsified into a non aqueous phase and wherein the non aqueous phase comprises

grease and an anticorrosion modifier and wherein the emulsifier is present in the range of about 0.1 to about 20% of the emulsified material and comprises,

(i) a oil soluble product made by reacting at least one hydrocarbyl-substituted carboxylic acid acylating agent with ammonia or an amine including but not limited to alkanol amine, hydroxy amine, and the like, the hydrocarbyl substituent of said acylating agent having about 50 to about 500 carbon atoms;

(ii) any other acylating agent having at least one hydrocarbyl substituent of up to about 40 carbon atoms, and reacting that said acylating agent with ammonia or an amine;

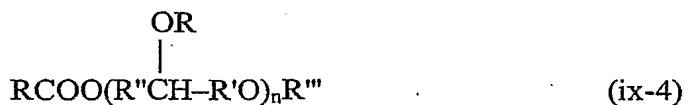
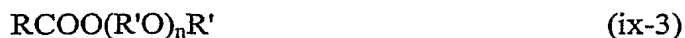
(iii) any other ionic or a nonionic compound having a hydrophilic-lipophilic balance (HLB) of about 1 to about 40;

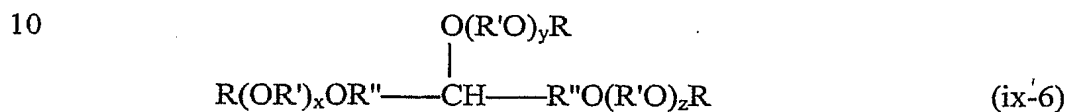
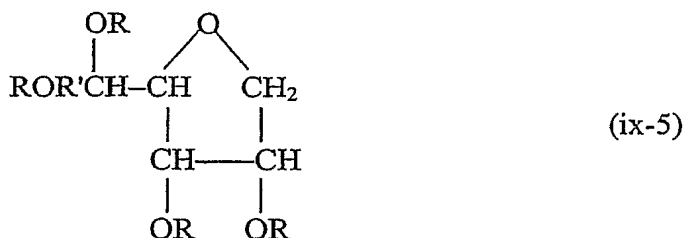
(iv) the reaction product of polyacidic polymer with at least one oil soluble product made by reacting at least one hydrocarbyl-substituted carboxylic acid acylating agent with ammonia, an amine, a polyamine, an alkanol amine or hydroxy amines;

(v) an amino alkylphenol which is made by reacting an alkylphenol, an aldehyde and an amine resulting in an amino alkylphenol;

(vi) a hydrocarbyl substituted carboxylic acid, or a reaction product of the hydrocarbyl substituted carboxylic acid or a reactive equivalent of such acid with an alcohol, the hydrocarbyl substituent of the acid or reactive equivalent thereof containing at least about 30 carbon atoms;

(vii) at least one compound represented by one or more of the formulae:



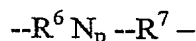


- wherein each R is independently hydrogen or a hydrocarbyl group of up to about 60 carbon atoms; each R' and R'' is independently an alkylene group of 1 to about 20 carbon atoms; each R''' is independently hydrogen, or an acyl or hydrocarbyl group of up to about 30 carbon atoms; n is a number in the range of zero to about 50; and x, y and z are independently numbers in the range of zero to about 50 with the total for x, y and z being at least 1;

(viii) an etheramine used to make the emulsified material can be represented by the formula



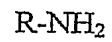
- wherein each n is a number from 0 to 50; each R is selected from the group consisting of hydrogen, hydrocarbyl groups of 1 to 16 carbon atoms, and mixtures thereof; each R^{sup.1} is selected from the group consisting of a hydrocarbylene group containing 2 to 18 carbon atoms and a group represented by the formula



- wherein both R⁶ and R⁷ are hydrocarbylene groups of 3 to 10 carbon atoms and p is a number from 1 to 4; and each R² is a hydrocarbyl group having a valence of y where y is a number from 1 to 3, and containing 1 to 50 carbon atoms when y is 1 and 1 to 18 carbon atoms when y is 2 or 3; provided that when n is zero, y is 1;

(ix) a phospholipid, any lipid containing a phosphoric acid, such as lecithin or cephalin;

(x) An amine represented by the formula:



where R = a poly(isobutenyl) group of molecular weight between 350 and 3000; or

(xi) the combination of any other above listed emulsifiers.

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